CLAIMS

1. An object rotating mechanism using a flow of a liquid crystal, comprising a pair of members having opposed surfaces which are opposed to each other and provided to be relatively movable in a state in which the opposed surfaces are opposed to each other, a liquid crystal provided between the opposed surfaces of the members, and liquid crystal molecule rotating means for rotating a liquid crystal molecule of the liquid crystal in a crossing surface crossing one of the opposed surfaces, wherein the liquid crystal molecule rotating means includes a pair of orientation films formed on the opposed surfaces of the members respectively, and the orientation films are subjected to a rubbing treatment in which directions of a rotation around an identical crossing line crossing the members are reverse to each other along a circumference of a circle having a center on the crossing line.

2. An object rotating mechanism comprising a pair of members having opposed surfaces which are opposed to each other, a liquid crystal provided between the opposed surfaces of the members, liquid crystal molecule rotating means for rotating a liquid crystal molecule of the liquid crystal in a crossing surface crossing one of the opposed surfaces, and a moving member having a pair of moving side opposed surfaces which are opposed to the opposed surfaces of the members respectively and provided to be relatively movable with respect to the members in a state in which the moving side opposed surfaces are opposed to the opposed

surfaces of the members, wherein the liquid crystal molecule rotating means includes a pair of orientation films formed on the opposed surfaces of the members respectively and a pair of moving side orientation films formed on the moving side opposed surfaces of the moving member respectively, the orientation films are subjected to a rubbing treatment in which directions of a rotation around an identical crossing line crossing the members and the moving member are the same along a circumference of a circle having a center on the crossing line, and the moving side orientation films are subjected to the rubbing treatment in which the direction of the rotation around the crossing line is reverse to the opposed orientation films along the circumference of the circle having the center on the crossing line.

3. The object rotating mechanism using a flow of a liquid crystal according to claim 2, wherein the rotating mechanism includes an output shaft which is coaxial with the crossing line.

4. The object rotating mechanism using a flow of a liquid crystal according to claim 2, wherein the rotating mechanism is provided in a plurality of stages, each of the rotating mechanism is provided in such a manner that a crossing line thereof is positioned on an identical line, and an output shaft to which the moving member of the rotating mechanism is attached is provided coaxially with the crossing line.

5. The object rotating mechanism using a flow of a liquid

crystal according to claim 1 or 2, wherein the liquid crystal molecule rotating means is provided with an orienting device for applying an electric field or a magnetic field to the liquid crystal.

6. The object rotating mechanism using a flow of a liquid crystal according to claim 5, wherein the liquid crystal molecule rotating means which are opposed to each other include a control device for controlling a timing in which the orienting device applies an electric field or a magnetic field to the liquid crystal, and the control device intermittently applies the electric field or the magnetic field to the liquid crystal.